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Submitted via email to Evan Kersnar

June 26, 2018

Mary D. Nichols, Chair  
California Air Resources Board  
1001 I Street  
Sacramento, CA 95814

Re: Comments to the Innovative Clean Transit Draft Proposed Regulation Summary

Dear Chair Nichols and Members of the Air Resources Board:

On behalf of BAE Systems, we hereby submit comments in response to the Innovative Clean Transit (ICT) Draft Proposed Regulation Summary, dated June 11, 2018.

BAE Systems is committed to electrifying transit in California and around the world. As a global company with over 20 years of experience developing and advancing electric powertrain technologies, BAE Systems provides solutions that not only deliver zero emission propulsion, but also bridge the transition to zero emission through electric hybrid powertrains and advancements such as geofencing, anti-idle and plug-in features.

Our path forward lies in zero emission solutions that include conversion kits to full electric systems and powertrains for hydrogen and battery-powered buses. Today, we use the same fundamental technologies that we developed for electric hybrid buses in our zero emission powertrains. Beyond transit, we are now applying these technologies for use on medium and heavy duty trucks.

We appreciate the efforts of the Air Resources Board (ARB) staff to provide a more flexible framework for transit agencies to meet the zero emission fleet goal in the ICT Draft Proposed Regulation Summary. To effectively meet that goal, BAE Systems strongly urges that ARB address three issues in the final ICT regulation:

- 1. Classify bus conversions from electric hybrid to full electric as zero emission buses (ZEBs) for the purpose of ICT purchase requirements, bonus credits, and compliance determinations.**

ARB staff confirmed at its workshop held on June 13, 2018, that it will count vehicle conversions from electric hybrid to full electric as ZEBs. As such, full electric conversions should be affirmatively classified in the ICT regulation as ZEBs in transit agencies' purchase requirements, bonus credits, and compliance determinations.

**2. As part of California's overarching goal of reducing vehicle emissions state-wide, acknowledge the benefits of transferring electric hybrid bus solutions to trucking fleets as a bridge to lower and zero emissions.**

ARB is finalizing the ICT regulation and framing the state's broader transportation goals to reduce truck emissions, which contribute significantly more greenhouse gas emissions than buses. By supporting hybrid electric bus solutions and acknowledging in the ICT regulation that the transfer of bus technologies serve broader transportation goals, the state will be supporting technologies that will be critical to achieving lower and zero emissions from trucks.

For example, BAE Systems has demonstrated the same electric hybrid drive technology and products used in buses today on low emission hybrid and zero emission fuel cell electric trucks in the goods movement market. Electric hybrid bus technologies that transfer directly to the broader truck market include power inverters, electric traction motors, battery systems and generators. Further, bus and truck applications share key underlying technology including controls, energy management, battery management, and battery charging.

As with a managed transition to zero emission bus fleets, electric hybrid and electrification technologies will be critical to the transition to lower and zero emissions trucking fleets. The ICT regulation should acknowledge and support solutions like electric hybrid that benefit broader, state-wide transportation goals.

**3. Retain the existing hybrid bus incentive in HVIP, include incentives for additional forms of electrification such as full electric conversions, and support the transferability of electric hybrid bus solutions to trucks.**

The ICT Draft Proposed Regulation Summary does not address the subject of incentives. The December 15, 2017, Discussion Document addresses potential incentives to encourage zero emission fleets, but does not include current electric hybrid incentives or electrification technologies such as mid-life conversions to full electric buses that will count as ZEBs. The final ICT regulation should retain incentives that encourage purchases of electric hybrid buses over conventional buses during the transition, add incentives for solutions that close the gap to zero emissions like full electric conversion kits, and support the transferability of low and zero emissions bus technologies to trucks and other transportation markets.

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Thank you for your consideration of BAE Systems' comments to the ICT Draft Proposed Regulation Summary. We welcome the opportunity to answer questions on our comments and work with the ARB team to meet California's zero emission transportation goals.

Sincerely,



Stephen J. Trichka  
Vice President and General Manager, Power & Propulsion Solutions  
BAE Systems

cc: R. Corey, ARB  
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